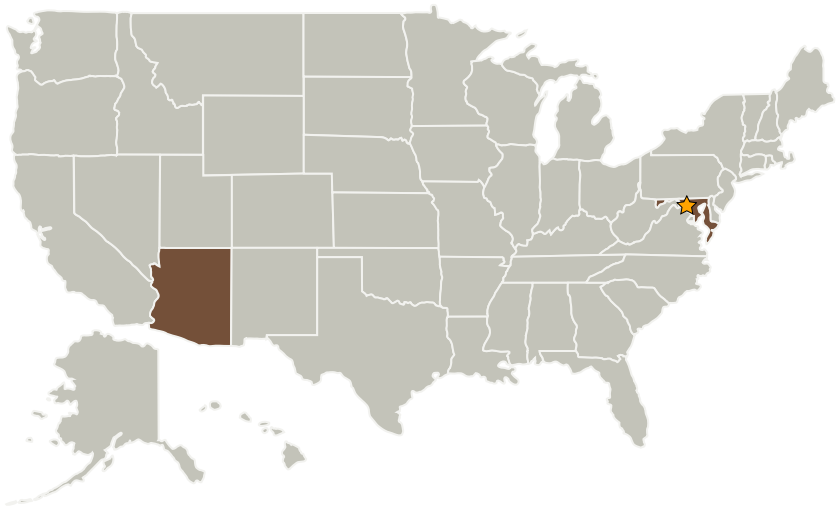
High Throughput Direct Detection Doppler Lidar, Phase I

Completed Technology Project (2004 - 2004)

Project Introduction

Lite Cycles, Inc. (LCI) proposes to develop a direct-detection Doppler lidar (D3L) technology called ELITE that improves the system optical throughput by more than an order of magnitude. This improvement has the potential to enable wind sensing via Doppler lidar from spaceborne platforms, as well as improving the warning time for on-board clear air-turbulence (CAT) sensors used in commercial aircraft. The ELITE concept will be modeled and tested in Phase-I, and the feasibility for spaceborne implementations will be assessed. A prototype D3L system that utilizes the ELITE technology will be built and tested in Phase-II. The test results will be used to assess the feasibility of ELITE-based spaceborne Doppler lidar.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Lite Cycles Inc	Supporting Organization	Industry	Tucson, Arizona

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Arizona	Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

James E Murray

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.4 Vehicle Systems
    - TX09.4.7 Guidance, Navigation and Control (GN&C) for EDL